

Appl. No.: 10/057,636
Reply to Office Action of: 5/18/04

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. **(Canceled)**
2. **(Canceled)**
3. **(Canceled)**
4. **(Canceled)**
5. **(Canceled)**
6. **(Canceled)**
7. **(Original)** A method of characterizing an optical fiber, comprising the steps of:
 - (a) irradiating one end of a first optical fiber of a first length with an optical pulse;
 - (b) wavelength dispersing an optical signal produced by said optical pulse after traversing said optical fiber;
 - (c) recording temporal profiles for a plurality of wavelength components of said wavelength dispersed optical signal;
 - (d) repeating steps (a), (b), and (c) for a second optical fiber of a second length substantially longer than said first length;
 - (e) comparing said temporal profiles recorded from said first fiber to said temporal profiles recorded from said second fiber to determine a dispersion of said second fiber.
8. **(Original)** The method of claim 7, wherein said second fiber is a multi-mode fiber and said comparing step determines at least an inter-modal dispersion of said second fiber.

9. **(Original)** The method of claim 7, wherein said comparing step determines a chromatic dispersion of said second fiber.

10. **(Original)** The method of claim 7, wherein said first length is less than 10m and said second length is greater than 1km.

11. **(Original)** A method of characterizing an optical fiber, comprising the steps of:
irradiating one end of an optical fiber with an optical pulse;
wavelength dispersing an optical signal emitted at a second end of said optical fiber and produced by said optical pulse while traversing said optical fiber;
recording temporal profiles for a plurality of wavelength components of said wavelength dispersed optical signal;
comparing said plurality of temporal profiles to determine time offsets between said temporal profiles; and
correcting said temporal profiles according to said offsets.

12. **(Original)** The method of claim 11, further comprising the step of combining said corrected temporal profiles to produce a combined corrected temporal profile with reduced dependence upon said wavelength.

13. **(Currently Amended)** The method of claim ~~11~~ 12, further comprising Fourier transforming said combined corrected temporal profile.

14. **(Original)** The method of claim 13, further comprising comparing said Fourier transformed combined corrected temporal profile to a Fourier transformed temporal response obtained for a reference optical fiber.

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15. **(Original)** The method of claim 11, wherein said comparing step includes calculating cross-correlation functions between a reference one of said temporal profiles and others of said temporal profiles.

16. **(Original)** The method of claim 11, wherein said irradiating, wavelength dispersing, and recording steps are repeated for a plurality of said optical pulses to produce said temporal profiles.

17. **(Canceled)**

18. **(Canceled)**

19. **(Canceled)**

20. **(Canceled)**

21. **(Canceled)**

22. **(Canceled)**

23. **(Canceled)**